

LIQUID EFFLUENT

Idaho Nuclear Technology and Engineering Center (INTEC) Sewage Treatment Plant (STP) Results for 2004

The WLAP for INTEC STP (LA-000115-02)* requires that the influent (CPP-769) and the effluent (CPP-773) be sampled monthly for the following parameters:

INTEC STP	
Influent (CPP-769)	Effluent (CPP-773)
Daily flow	Daily flow
Total Kjeldahl nitrogen	Total Kjeldahl nitrogen
Nitrate + nitrite as nitrogen	Nitrate + nitrite as nitrogen
Biochemical oxygen demand	Biochemical oxygen demand
Total phosphorus	Total phosphorus
Total suspended solids	Total suspended solids
	Electrical conductivity
	Total dissolved solids
	Chloride
	Total coliform
	pH**
	Sodium**

The permit sets concentration limits for the effluent for total nitrogen at 20 mg/L and total suspended solids (TSS) at 100 mg/L. Total nitrogen is calculated from the reported total Kjeldahl nitrogen and nitrate + nitrite as nitrogen results.

The permit specifies a flow limit of 30 million gallons/permit year. For the INTEC STP, the permit year runs from November 1 through October 31. The total permit year flow measured by the flow meter was approximately 12.06 million gallons.

During the first quarter of 2004:

- All influent and effluent permit-required parameters were within historical ranges.
- There were no permit noncompliances associated with the influent.
- For the effluent, the calculated total nitrogen concentration for February 2004 exceeded the 20-mg/L permit limit, which is not uncommon during winter months at this location.

During the second quarter of 2004:

- All influent permit-required parameters were within historical ranges; however, a historical high was reported for nitrate + nitrite as nitrogen for the June effluent sample.
- There were no permit noncompliances associated with the influent.
- For the effluent, the calculated total nitrogen concentration for June 2004 exceeded the 20-mg/L permit limit, which, although more common during the winter months, can occur any time during the year.

* Final WLAP LA-000130-04 for the INTEC New Percolation Ponds was issued on December 2, 2004, for the combined effluent from the service waste system (formerly LA-000130-03) and the INTEC Sewage Treatment Plant (formerly LA-000115-02).

**December samples were collected under WLAP LA-000130-04, which also included pH and sodium.

During the third quarter of 2004:

- All influent and effluent permit-required parameters were within historical ranges.
- There were no permit noncompliances associated with the influent.
- For the effluent, the calculated total nitrogen concentration for August 2004 exceeded the 20-mg/L permit limit, which although more common during the winter months, can occur any time of the year.
- The effluent could not be sampled in September 2004 because the ponds were drained to repair the liners.

During the fourth quarter of 2004:

- All influent and effluent permit-required samples were within historical ranges.
- There were no permit noncompliances associated with the influent or effluent.

Numerous maintenance and operation corrective actions have been implemented to manage the total nitrogen concentrations in the effluent. In December 2004, major modifications to reroute the treated sanitary wastewater from the Sewage Treatment Plant to the INTEC New Percolation Ponds and to close the infiltration trenches associated with the Sewage Treatment Plant were completed.

The following graphs present results of sampling performed since 2003 through November 2004 for those parameters with set concentration limits. Major modifications in December 2004 changed the compliance point, so December data are not presented. They will be presented with the first quarter 2005 data.

FOR MORE INFORMATION

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